What is Claimed is:

1. A driving device for transporting an object, comprising:

guide means connected with the object for guiding the object; and

driving means attached to the object for providing the object a driving force which is larger than an interactive force between the object and the guide means.

2. The driving device as set forth in claim 1, wherein the driving means comprises a piezoelectric element fixed by a first end to the object and powered by a supply voltage.

3. The driving device as set forth in claim 2, further comprising a weight of a predetermined mass attached to a second end of the piezoelectric element opposite to the first end.

4. The driving device as set forth in claim 1, further comprising elastic means for enabling elastic contact between the object and the guide means to provide the object and the guide means with an interactive force proportional to an elastic force.

5. The driving device as set forth in claim 2, wherein

absolute values of the supply voltage per time fed to the piezoelectric element are different from each other before and after a peak.

6. A driving device for transporting a lens of an optical instrument, comprising:

guide means connected perpendicularly with the lens for guiding reciprocating movement of the lens; and

driving means arranged coplanar with the lens and fixed by a first end to a periphery of the lens for providing the lens with a transport force which is larger than an interactive force between the lens and the guide means.

7. The driving device as set forth in claim 6, wherein the driving means comprises a piezoelectric element powered by a supply voltage.

8. The driving device as set forth in claim 7, further comprising a weight of a predetermined mass attached to a second end of the piezoelectric element opposite to the first end.

9. The driving device as set forth in claim 8, wherein the piezoelectric element comprises a plurality of element sections which are arranged in the periphery of the lens, spaced at an equal interval.

10. The driving device as set forth in claim 8, wherein the piezoelectric element is shaped as a ring surrounding an entire periphery of the lens.

11. The driving device as set forth in claim 7, further comprising a lens frame for surrounding the periphery of the lens, wherein the first end of the piezoelectric element is fixed to the lens frame.

12. The driving device as set forth in claim 6, wherein the guide means is extended through the lens in a position adjacent to the periphery of the lens.

13. The driving device as set forth in claim 12, wherein the guide means comprises at least one bar of a polygonal cross section.

14. The driving device as set forth in claim 12, wherein the guide means comprises at least two bars of a circular cross section.

15. The driving device as set forth in claim 6, further comprising elastic means for enabling elastic contact between the lens and the guide means to provide the lens and the guide

means with an interactive force proportional to an elastic force.

16. The driving device as set forth in claim 7, wherein absolute values of the supply voltage per time fed to the piezoelectric element are different from each other before and after a peak.

17. A driving device for transporting a lens in an optical instrument, comprising:

guide means connected perpendicularly with the lens for guiding reciprocating movement of the lens; and

driving means having a first end fixed perpendicularly to a face of the lens to provide the lens with a transport force which is larger than an interactive force between the lens and the guide means.

18. The driving device as set forth in claim 17, wherein the driving means comprises a piezoelectric element powered by a supply voltage.

19. The driving device as set forth in claim 18, further comprising a weight of a predetermined mass attached to a second end of the piezoelectric element opposite to the first end.

20. The driving device as set forth in claim 19, wherein the piezoelectric element comprises a plurality of element sections arranged in the face of the lens adjacent to a periphery of the lens, spaced at an equal interval.

21. The driving device as set forth in claim 19, wherein the piezoelectric element is shaped as a ring arranged in the face of the lens adjacent to the periphery thereof.

22. The driving device as set forth in claim 18, further comprising a lens frame for surrounding the periphery of the lens, wherein the first end of the piezoelectric element is fixed to the lens frame.

23. The driving device as set forth in claim 17, further comprising elastic means for enabling elastic contact between the lens and the guide means to provide the lens and the guide means with an interactive force proportional to an elastic force.

24. The driving device as set forth in claim 17, wherein the guide means is extended through the lens in a position adjacent to the periphery of the lens.

25. The driving device as set forth in claim 24, wherein

the guide means comprises at least one bar of a polygonal cross section.

26. The driving device as set forth in claim 24, wherein the guide means comprises at least two bars of a circular cross section.

27. The driving device as set forth in claim 17, wherein the guide means comprises an external frame contacting with a peripheral surface of the lens to guide reciprocating movement of the lens.

28. The driving device as set forth in claim 27, wherein the lens has at least one segment projected radially from the periphery of the lens, and wherein the external frame has a recess formed along a route of the lens for receiving the projected segment.

29. The driving device as set forth in claim 28, wherein the piezoelectric element is fixed with a portion of the projected segment.

30. The driving device as set forth in claim 18, wherein absolute values of the supply voltage per time fed to the piezoelectric element are different from each other before and

after a peak.

31. A method of transporting a lens with the driving device according to claim 6, the method comprising the following steps of:

(a) moving the second end of the driving means along a transport direction of the lens at a first velocity; and

(b) restoring the driving means to its original configuration at a second velocity faster than the first velocity of the second end of the driving means in the step (a) to move the lens which is fixed with the first end of the driving means.

32. The method of transporting a lens as set forth in claim 31, wherein the driving means comprises a piezoelectric element powered by a supply voltage, and wherein the supply voltage per time fed to the piezoelectric element in the step (a) has an absolute value smaller than that of the supply voltage in the step (b).

33. A method of transporting a lens with the driving device according to claim 6, the method comprising the following steps of:

(a) moving the second end of the driving means along a transport direction of the lens at a first velocity; and

(b) operating the driving means at a second velocity faster than the first velocity of the second end of the driving means in the step (a) to move the lens, which is fixed to the first end of the driving means, along the transport direction of the lens beyond a position of the lens that will be achieved by restoration of the driving means to its original position; and

(c) restoring the second end of the driving means to its original configuration.

34. The method of transporting a lens as set forth in claim 33, wherein the driving means comprises a piezoelectric element powered by a supply voltage, and wherein the supply voltage per time fed to the piezoelectric element in the step (a) has an absolute value smaller than that of the supply voltage in the step (b).

35. A driving device for transporting a lens of an optical instrument, comprising:

guide means connected perpendicularly with the lens for guiding reciprocating movement of the lens;

elastic means for enabling elastic contact between the lens and the guide means to provide the lens and the guide means with an interactive force proportional to an elastic force;

piezoelectric driving means being coplanar with the lens,

having a first end fixed to a periphery of the lens, and powered by a supply voltage to provide the lens with a transport force which is larger than an interactive force between the lens and the guide means;

a weight of a predetermined mass attached to a second end of the piezoelectric driving means opposite to the first end.

36. The driving device as set forth in claim 35, wherein the piezoelectric driving means comprises a plurality of sections which are arranged in the periphery of the lens, spaced at an equal interval.

37. The driving device as set forth in claim 35, wherein the piezoelectric driving means is shaped as a ring surrounding an entire periphery of the lens.

38. The driving device as set forth in claim 35, further comprising a lens frame for surrounding the periphery of the lens, wherein the first end of the piezoelectric driving means is fixed to the lens frame.

39. The driving device as set forth in claim 35, wherein the guide means is extended through the lens in a position adjacent to the periphery of the lens.

40. The driving device as set forth in claim 39, wherein the guide means comprises at least one bar of a polygonal cross section.

41. The driving device as set forth in claim 39, wherein the guide means comprises at least two bars of a circular cross section.

42. The driving device as set forth in claim 35, wherein absolute values of the supply voltage per time fed to the piezoelectric element are different from each other before and after a peak.

43. A driving device for transporting a lens of an optical instrument, comprising:

guide means extended through the lens in a position adjacent to the periphery of the lens for guiding reciprocating movement of the lens;

elastic means for enabling elastic contact between the lens and the guide means to provide the lens and the guide means with an interactive force proportional to an elastic force;

piezoelectric driving means having a first end fixed perpendicularly to a face of the lens, and powered by a supply voltage to provide the lens with a transport force which is larger than an interactive force between the lens and the guide

means; and

a weight of a predetermined mass attached to a second end of the piezoelectric driving means opposite to the first end.

44. The driving device as set forth in claim 43, wherein the piezoelectric element comprises a plurality of element sections arranged in the face of the lens adjacent to a periphery of the lens, spaced at an equal interval.

45. The driving device as set forth in claim 43, wherein the piezoelectric element is shaped as a ring arranged in the face of the lens adjacent to the periphery thereof.

46. The driving device as set forth in claim 43, further comprising a lens frame for surrounding the periphery of the lens, wherein the first end of the piezoelectric element is fixed to the lens frame.

47. The driving device as set forth in claim 43, wherein the guide means comprises at least one bar of a polygonal cross section.

48. The driving device as set forth in claim 43, wherein the guide means comprises at least two bars of a circular cross section.

49. The driving device as set forth in claim 43, wherein absolute values of the supply voltage per time fed to the piezoelectric element are different from each other before and after a peak.

50. A driving device for transporting a lens of an optical instrument, comprising:

an external frame being in contact with a peripheral surface of the lens for guiding reciprocating movement of the lens;

elastic means for enabling elastic contact between the lens and the external frame to provide the lens and the external frame with an interactive force proportional to an elastic force;

piezoelectric driving means having a first end fixed perpendicularly to a face of the lens, and powered by a supply voltage to provide the lens with a transport force which is larger than an interactive force between the lens and the guide means; and

a weight of a predetermined mass attached to a second end of the piezoelectric driving means opposite to the first end.

51. The driving device as set forth in claim 50, wherein the piezoelectric element comprises a plurality of element

sections arranged in the face of the lens adjacent to a periphery of the lens, spaced at an equal interval.

52. The driving device as set forth in claim 50, wherein the piezoelectric element is shaped as a ring arranged in the face of the lens adjacent to the periphery thereof.

53. The driving device as set forth in claim 50, further comprising a lens frame for surrounding the periphery of the lens, wherein the first end of the piezoelectric element is fixed to the lens frame.

54. The driving device as set forth in claim 50, wherein the lens has at least one segment projected radially from the periphery of the lens, and wherein the external frame has a recess formed along a route of the lens for receiving the projected segment.

55. The driving device as set forth in claim 54, wherein the piezoelectric element is fixed with a portion of the projected segment.

56. The driving device as set forth in claim 50, absolute values of the supply voltage per time fed to the piezoelectric element are different from each other before and after a peak.

57. A method of transporting a lens with the driving device according to claim 17, the method comprising the following steps of:

(a) moving the second end of the driving means along a transport direction of the lens at a first velocity; and

(b) restoring the driving means to its original configuration at a second velocity faster than the first velocity of the second end of the driving means in the step (a) to move the lens which is fixed with the first end of the driving means.

58. The method of transporting a lens as set forth in claim 57, wherein the driving means comprises a piezoelectric element powered by a supply voltage, and wherein the supply voltage per time fed to the piezoelectric element in the step (a) has an absolute value smaller than that of the supply voltage in the step (b).

59. A method of transporting a lens with the driving device according to claim 17, the method comprising the following steps of:

(a) moving the second end of the driving means along a transport direction of the lens at a first velocity; and

(b) operating the driving means at a second velocity

faster than the first velocity of the second end of the driving means in the step (a) to move the lens, which is fixed to the first end of the driving means, along the transport direction of the lens beyond a position of the lens that will be achieved by restoration of the driving means to its original position; and

(c) restoring the second end of the driving means to its original configuration.

60. The method of transporting a lens as set forth in claim 59, wherein the driving means comprises a piezoelectric element powered by a supply voltage, and wherein the supply voltage per time fed to the piezoelectric element in the step (a) has an absolute value smaller than that of the supply voltage in the step (b).